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## INDUSTRIAL HYGIENE SURVEY

*Per fluoro octanic Acid (PFOA) – Ovens and  
Dispersion Mixing*

*TACONIC  
Petersburg, New York*

*June*  
~~*April*~~ 2003

Prepared for:

**Taconic**  
136 Coon Brook Road  
Petersburg, NY 12138

Prepared by:

**Adirondack Environmental Services, Inc.**  
314 North Pearl Street  
Albany, NY 12207

Adirondack Project No. 030514EA



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### **EXECUTIVE SUMMARY**

Adirondack Environmental Services (Adirondack) performed a combination of personal and area exposure air monitoring during first shift oven-coating and dispersion mixing operations. The purpose of the air monitoring was to quantify employee and area exposure to perfluorooctanoic acid (PFOA), a surfactant used to aid in the polymerization of fluoropolymer resins used in manufacturing Teflon™ type coatings. Employees monitored included two Oven Operators and the Dispersion Technician. Areas monitored included the top of the Building #4 ovens, and next to the Building #4 Smog Hog. Sampling took place during day shift operations, and were reported to be reflective of “typical” conditions. Adirondack also analyzed two bulk waste samples for PFOA. These materials included breach waste from the furnaces in Building #4, and mixed cutting from the Mayer saw. Both of these waste materials are believed to contain bi-products of materials, which had been created using PFOA.

PFOA was not found above detectable limits in any of the samples collected. Reasons for non-detection could include; no PFOA was present in the samples, PFOA was present but below the limits of detection, PFOA was chemically bound with other polymers in the sample, or the analysis protocol was insensitive to the altered molecular structure of the PFOA.

### **RECOMMENDED PLAN OF ACTION**

The following recommendations are provided for consideration.

- Inform all affected employees of these air sampling results. Maintain these exposure records for a minimum of 30 years, as is required in 29 CFR 1910.1020, Access to Medical and Exposure Records. This report and the attached forms can be used to help meet these requirements.
- If further monitoring is desired, Adirondack recommends developing an alternative method for PFOA analysis. This “new” analysis method could be tailored to be more sensitive to lower levels of PFOA.
- The MSDS for pure PFOA indicates exposure can occur via absorption through unprotected skin. Although PFOA is only a minor component in some dispersion chemicals used, as a best management practice, Adirondack recommends persons handling the un-polymerized products wear appropriate chemical resistant gloves and eye/face protection until the product is fully bound.
- Perform additional monitoring following any changes to process or engineering controls.



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## **BACKGROUND**

PFOA belongs to a family of fluoropolymer chemicals used for years as a dispersant in the manufacturing of coated metal and glass cloth. Recent studies have found that chemicals in this family of compounds may be persistent in the environment and could exhibit toxicological effects in animals. Taconic utilizes dispersants that contain small quantities of PFOA. As a proactive approach to safety, Adirondack was asked to perform employee exposure monitoring on employees that utilize products potentially containing residual PFOA. Cameron Steuer MS, CIH from Adirondack performed this monitoring on June 3<sup>rd</sup>, 2003.

## **EXPOSURE EVALUATION**

### **Air Samples**

#### **Scott Burt - Dispersion**

Scott Burt worked as a Dispersion Technician during the monitoring period. During this time period Mr. Burt mixed dispersion products with an electric mixer. He also hand cleaned mixing equipment and drums, transported mixed product to the ovens, and performed general housekeeping. Some of the dispersion chemicals utilized by Mr. Burt contain small quantities of PFOA. During "dusty" or "nasty gas" mixing evolutions Mr. Burt wears a full-face respirator equipped with combination P-100 and acid/ov-gas cartridges. The monitoring period occurred over a 447-minute period, but work performed was reportedly somewhat slower than normal.

**Sample analysis indicates Mr. Burt had no detectable exposure to PFOA during the time period monitored.**

#### **Alan Humphrey - Oven Operator**

Alan Humphrey worked as an Oven Operator in Building #5 during the time period monitored. Mr. Humphrey loaded and unloaded product from the rolling/coating ovens. Other job activities performed included troubleshooting problems with the coating operation, adjusting the coating settings, and cleaning pumps and the coating equipment. During the shift three narrow and one wide oven were in operation, however only the narrow ovens were coating product. The monitoring period occurred over a 405-minute period, and was reported as typical of a shift.

**Sample analysis indicates Mr. Humphrey had no detectable exposure to PFOA during the time period monitored.**



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## **EXPOSURE EVALUATION, CONTINUED**

### **Air Samples, Continued**

#### **Tony Bourn – Oven Operator**

Tony Bourn worked as an Oven Operator in Building #4 during the time period monitored. Mr. Bourn loaded and unloaded product from the rolling/coating ovens. Other job activities performed included troubleshooting problems with the coating operation, adjusting the coating settings, and cleaning pumps and coating equipment. During the shift five of the six ovens were operating. Visible smoke was observed coming out of the top of ovens #11 and #12. Mr. Bourn was monitored over a period of 401 minutes, and reportedly performed work typical of a “normal” shift.

**Sample analysis indicates Mr. Bourn had no detectable exposure to PFOA during the time period monitored.**

#### **Building #4 Area Sample #1**

An area air sample was collected from the top of the catwalk above the ovens on the south end of building #4. Five of the six ovens were operating at the time of the monitoring. Smoke was observed coming out of the tops of the #11 and #12 ovens. The sampling location was chosen such that it would be downwind of the ovens and capture worst-case exposure conditions.

**Sample analysis indicates no PFOA was detected in the sample.**

#### **Building #4 Area Sample #2**

An area air sample was collected from the top of the Smog Hog (fan end), on the south end of the building. The sampling location was chosen such that it would be downwind of the prevailing air currents in the building and represent a worst-case exposure area. An exhaust fan was located above the monitoring location. The fan operated in the morning, but only periodically for the rest of the day.

**Sample analysis indicates no PFOA was found in the sample.**



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## **EXPOSURE EVALUATION, CONTINUED**

### **Bulk Samples**

Two bulk samples were collected for analysis of PFOA content. One sample was of Breech waste collected from the Building #4 Oven Room. Andrew Kawczak collected this sample on April 11th, 2003. A second bulk sample was taken from the Mayer Saw waste cuttings drum.

**Sample analysis indicates no PFOA was detected in either sample.**

## **EXPOSURE LIMITS**

Neither the Occupational Safety and Health Administration (OSHA) nor the American Conference of Governmental Industrial Hygienists (ACGIH) have established recommended limits for PFOA exposure. 3M has recommended an exposure limit of  $0.1 \text{ mg/m}^3$  for PFOA. ACGIH has established a  $0.01 \text{ mg/m}^3$  threshold limit value (TLV) for ammonium perfluorooctanoate (APFO), which is a similar 8-carbon member of the same chemical family, but not the same material.

## **SAMPLING/ANALYSIS PROCEDURES**

Adirondack was unable to find a specific sampling protocol for collection of PFOA in air. In accordance with a generic PFOA material safety data sheet (MSDS), the material is a solid with a low vapor pressure. The material was therefore treated as a solid and collected on polyvinyl chloride (PVC) filters with a  $5.0 \text{ um}$  pore size. These filters were chosen to help facilitate high sample recovery and minimal interferences during analysis. The filters were connected to Gilian, GilAir 5 personal air sampling pump and a length of Tygon tubing. The pump was calibrated on site before and after the survey using a *Bios DC-1 Dry Cell Flow Calibrator*. The air pump was placed on the employee's belt and the sampling tube attached to the front portion of the shoulder inside the worker's breathing zone (12 inches from his nose and mouth area). A known volume of air was then drawn through the tubes to capture particulate PFOA. The air pumps remained on and running during the entire time the employee worked. See Air Sampling Data Sheets for specific calibration and pump information.

The samples were submitted to Adirondack's laboratory for analysis. Adirondack is an AIHA accredited lab (#100307). Samples submitted were analyzed using an in-house method based on the analysis of chlorinated organic acids. In this method, the sample cassette filter is placed in a vial containing diethylether, then shaken for 30 minutes. The diethylether is then removed and concentrated into toluene. 0.8 ml of methanol and 10 ul of 2m(trimethyl silyl) diazomethane is then added, and the mixture placed into a water bath at  $60^\circ\text{C}$  for an hour. The solution is then removed and 1g of silicic acid is added and mixed. 10 ml of deionized water is then added and



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mixed. The toluene layer is then harvested and analyzed for PFOA by GC/ECD using a dual DB-5 and ASPB-608 column (split injection) using pure PFOA (98%) used as a standard for detection.



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### PFOA EXPOSURE RESULTS

**Date of Survey:** June 3, 2003

**Equipment:** Gilian GilAir5 air sampling pumps calibrated before and after the survey using a *Bios DC-1 Dry Cell Flow Calibrator*, Serial Numbers S3063 and B3132.

**Method of Collection:** Air was drawn through a PVC 5.0  $\mu$ m filter.

**Method of Analysis:** In-House

<i>Sample</i>	<i>Time &amp; Duration</i>	<i>Exposure Over Time Period Monitored (mg/m<sup>3</sup>)</i>	<i>OSHA PEL (mg/m<sup>3</sup>)</i>	<i>ACGIH TLV* (mg/m<sup>3</sup>)</i>	<i>3M REL** (mg/m<sup>3</sup>)</i>
<b>G15</b> <i>Scott Burt Dispersion</i>	0748-1515 447 min.	<0.0131	None	0.01 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
<b>G13</b> <i>Alan Humphrey Oven Operator</i>	0748-1214 1245-1504 405 min.	<0.0145	None	0.01 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
<b>G14</b> <i>Tony Bourn Oven Operator</i>	752-1255 1326-1504 401 min.	<0.0147	None	0.01 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
<b>G17</b> <i>Area Above Building #4 Ovens</i>	0814-1504 410 min.	<0.0147	NA	NA	NA
<b>G16</b> <i>Area Next to SmogHog, Building #4</i>	0820-1504 404 min.	<0.0140	NA	NA	NA
<b>Blank</b>	NA	<10 ug	NA	NA	

\* TLV for Ammonium perfluorooctanoate (APFO)

\*\* Recommended Exposure Limit established by manufacturer



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### Industrial Hygiene Survey Results

Employee Name: Scott Burt (XXX-XX-5956)  
Date of Survey: June 3, 2003  
Exposure: PFOA

Taconic is concerned with employee health and safety. In an effort to ensure you are working in a safe and healthy work environment, we asked that you participate in an industrial hygiene exposure assessment to monitor your exposure to perfluorooctanoic acid (PFOA) while you performed your normal duties. We wish to share with you the results of this exposure assessment.

Parameter	Exposure During the Time Period Sampled	OSHA Limit	Your Exposure
PFOA	<0.0131 mg/m <sup>3</sup>	None	NA

**OSHA**      **Occupational Safety and Health Administration.**

**PEL**      **Permissible Exposure Limit.** Based upon an 8-hour TWA exposure. This is OSHA's legal limit over which employees cannot be exposed without the use of appropriate personal protective equipment.

**TWA**      **Time Weighted Average.** Result extrapolated over time period monitored.

**Note to worker:** No PFOA was detected in your sample.

\_\_\_\_\_  
Employee Signature      Date: \_\_\_\_\_

\_\_\_\_\_  
Taconic Representative      Date: \_\_\_\_\_



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### Industrial Hygiene Survey Results

Employee Name: Alan Humphrey (XXX-XX-5866)  
Date of Survey: June 3, 2003  
Exposure: PFOA

Taconic is concerned with employee health and safety. In an effort to ensure you are working in a safe and healthy work environment, we asked that you participate in an industrial hygiene exposure assessment to monitor your exposure to perfluorooctanoic acid (PFOA) while you performed your normal duties. We wish to share with you the results of this exposure assessment.

Parameter	Exposure During the Time Period Sampled	OSHA Limit	Your Exposure
PFOA	<0.0145 mg/m <sup>3</sup>	None	NA

**OSHA** Occupational Safety and Health Administration.

**PEL** Permissible Exposure Limit. Based upon an 8-hour TWA exposure. This is OSHA's legal limit over which employees cannot be exposed without the use of appropriate personal protective equipment.

**TWA** Time Weighted Average. Result extrapolated over time period monitored.

**Note to worker:** No PFOA was detected in your sample.

\_\_\_\_\_  
Employee Signature Date: \_\_\_\_\_

\_\_\_\_\_  
Taconic Representative Date: \_\_\_\_\_



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### Industrial Hygiene Survey Results

Employee Name: Tony Bourn (XXX-XX-0837)  
Date of Survey: June 3, 2003  
Exposure: PFOA

Taconic is concerned with employee health and safety. In an effort to ensure you are working in a safe and healthy work environment, we asked that you participate in an industrial hygiene exposure assessment to monitor your exposure to perfluorooctanoic acid (PFOA) while you performed your normal duties. We wish to share with you the results of this exposure assessment.

Parameter	Exposure During the Time Period Sampled	OSHA Limit	Your Exposure
PFOA	<0.0147 mg/m <sup>3</sup>	None	NA

**OSHA** Occupational Safety and Health Administration.

**PEL** Permissible Exposure Limit. Based upon an 8-hour TWA exposure. This is OSHA's legal limit over which employees cannot be exposed without the use of appropriate personal protective equipment.

**TWA** Time Weighted Average. Result extrapolated over time period monitored.

**Note to worker:** No PFOA was detected in your sample.

\_\_\_\_\_  
Employee Signature Date: \_\_\_\_\_

\_\_\_\_\_  
Taconic Representative Date: \_\_\_\_\_

**ATTACHMENT A**  
**LABORATORY ANALYSIS REPORT WITH CHAIN OF**  
**CUSTODY DOCUMENTATION**

**TAC EPA 04614**



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July 01, 2003

IH Dept.  
Taconic  
Steuer, Cameron

TEL:  
FAX:

RE: PFOA Personal/Environmental Monitoring

Order No.: 030606025

Dear IH Dept.:

Adirondack Environmental Services, Inc received 8 samples on 6/4/2003 for the analyses presented in the following report.

There were no problems with the analyses and all associated QC met EPA or laboratory specifications, except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

ELAP#: 10709  
AIHA#: 100307

Tara Daniels  
Laboratory Manager

**TAC EPA 04615**

**Analytical Results  
for**

**Taconic**

**WorkOrder:** 030606025

**Client Reference:** PFOA Personal/Environmental Monitoring

Analyte	Concentration			Limit of Detection (ug)	Qual	Test Method	Date Analyzed /Analyst
	(ug)	(mg/m³)	(ppm)				
Client ID: G14	Lab ID: 001A	Date Sampled: 6/3/2003		Media: Filter		Air Vol.(L): 681	
Perfluorooctanoic acid	<10.0	<0.0147	--	10	Perfluorooctanoic	06/30/2003	TN
Perfluorooctanoic acid	<10.0	<0.0147	--	10	Perfluorooctanoic	06/30/2003	TN
Client ID: G13	Lab ID: 002A	Date Sampled: 6/3/2003		Media: Filter		Air Vol.(L): 692	
Perfluorooctanoic acid	<10.0	<0.0145	--	10	Perfluorooctanoic	06/30/2003	TN
Client ID: G17	Lab ID: 003A	Date Sampled: 6/3/2003		Media: Filter		Air Vol.(L): 680	
Perfluorooctanoic acid	<10.0	<0.0147	--	10	Perfluorooctanoic	06/30/2003	TN
Client ID: G16	Lab ID: 004A	Date Sampled: 6/3/2003		Media: Filter		Air Vol.(L): 716	
Perfluorooctanoic acid	<10.0	<0.0140	--	10	Perfluorooctanoic	06/30/2003	TN
Client ID: G15	Lab ID: 005A	Date Sampled: 6/3/2003		Media: Filter		Air Vol.(L): 761	
Perfluorooctanoic acid	<10.0	<0.0131	--	10	Perfluorooctanoic	06/30/2003	TN
Client ID: Blank	Lab ID: 006A	Date Sampled: 6/3/2003		Media: Filter		Air Vol.(L): NA	
Perfluorooctanoic acid	<10.0	--	--	10	Perfluorooctanoic	06/30/2003	TN
Client ID: Bulk #1	Lab ID: 007A	Date Sampled: 6/4/2003		Media:		Air Vol.(L): NA	
Perfluorooctanoic acid	<10.0	--	--	10	Perfluorooctanoic	06/30/2003	TN
Client ID: Bulk #2	Lab ID: 008A	Date Sampled: 6/3/2003		Media:		Air Vol.(L): NA	
Perfluorooctanoic acid	<10.0	--	--	10	Perfluorooctanoic	06/30/2003	TN

(a) Analysis indicates possible breakthrough; back section result is greater than % of the front section result.

**General Notes:**

<: Less than the indicated limit of detection (LOD).

--: Information not available or not applicable.

Back sections were checked and showed no significant breakthrough.

**Adirondack Environmental Services, Inc**

Date: 01-Jul-03

**CLIENT:** Taconic  
**Project:** PFOA Personal/Environmental Monitoring**Lab Order:** 030606025**Lab ID:** 030606025-001**Collection Date:** 6/3/2003**Client Sample ID:** G14**Matrix:** AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**Lab ID:** 030606025-007**Collection Date:** 6/4/2003**Client Sample ID:** Bulk #1**Matrix:** BULK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**PERFLUOROOCTANOIC ACID****GC****Analyst:** TN

Perfluorooctanoic acid

&lt; 10.0

10.0

µg/g

1

6/30/2003

**Lab ID:** 030606025-008**Collection Date:** 6/3/2003**Client Sample ID:** Bulk #2**Matrix:** BULK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**PERFLUOROOCTANOIC ACID****GC****Analyst:** TN

Perfluorooctanoic acid

&lt; 10.0

10.0

µg/g

1

6/30/2003

**Qualifiers:**

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



**ATTACHMENT B**  
**AIR SAMPLING FIELD DATA SHEETS**



# INDUSTRIAL HYGIENE AIR SAMPLING RECORD FIELD DATA SHEET

314 North Pearl Street  
Albany, New York 12207  
518-434-4546 / 434-0891 FAX

CLIENT NAME Teconic  
PROJECT LOCATION Petersburg, NY  
SPECIFIC LOCATION Building #4

PLEASE PRINT

PERSON PERFORMING SAMPLING	SHIPPING DATE	SAMPLING DATE	NIOSH SAMPLING METHOD
J. Cameron Steuer, MS, CIH		6/3/2003	In House

MONITORED EMPLOYEE/AREA	S.S. #
Tony Bourn	XXX-XX-0837

TITLE	DEPARTMENT
Oven Operator	

TASK/OPERATION	PPE	ENG/WORK PRACTICES
Oven Operation	Glasses, gloves	General Exhaust

ENVIRONMENTAL CONDITIONS AND NOTES
Monitor rolling/coating operations. Load/unload product. Add coating chemicals to coater. Troubleshoot problems. Adjust settings. QA/QC Clean pumps and clean coating equipment. Typical shift reported. Some smoke seen coming from ovens 11 and 12. Exhaust fan on periodically.

PRE-CALIBRATION	POST-CALIBRATION	CALCULATIONS
PUMP MFG. Gillian GilAir5	PUMP MFG. Gillian GilAir5	Average Pump Flow: 1.698
PUMP No. G14	PUMP No. G14	L/min
LOCATION Site	LOCATION Site	
FLOW RATE	FLOW RATE (CIRCLE ONE)	Name DCS
1.714 <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	<input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	Method BIOS DC-1 Dry Cal
	Calibrator: BIOS DC-1 DryCal	6/3/2003 Time
	Date: 6/3/03 Time: 745	

PUMP NO.	SAMPLE INFORMATION			CLOCK TIME			SAMPLE VOLUME (LITER)	RESULT (DIRECT READ)
	FIELD NO.	TYPE MEDIA	LOT NO.	START	STOP	TIME (MIN.)		
14	G14	PVC Pre-We	H2NN02628	7:52	12:55	303	514.494	
		Omega 5.0 um		13:26	15:04	98	166.404	
		Lot#AZ020501-B3765				0	0	
						0		
					TOTAL	401	680.898	

INTERFERENCES AND IH COMMENTS TO LAB	Supporting Sample Field #
	Blanks
	Bulks
	Other

REVIEWED BY	PRINT	SIGNATURE	TAC EPA 04620
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# INDUSTRIAL HYGIENE AIR SAMPLING RECORD FIELD DATA SHEET

314 North Pearl Street  
Albany, New York 12207  
518-434-4546 / 434-0891 FAX

CLIENT NAME Teconic  
PROJECT LOCATION Petersburg, NY  
SPECIFIC LOCATION Building #5

LEASE PRINT

PERSON PERFORMING SAMPLING	SHIPPING DATE	SAMPLING DATE	NIOSH SAMPLING METHOD
J. Cameron Steuer, MS, CIH		6/3/2003	In House

MONITORED EMPLOYEE/AREA	S.S. #
Alan Humphrey	XXX-XX-5866

TITLE	DEPARTMENT
Oven Operator	

TASK/OPERATION	PPE	ENG/WORK PRACTICES
Oven Operator	Glasses, gloves	

ENVIRONMENTAL CONDITIONS AND NOTES

Monitor rolling/coating operations. Load/unload product. Add coating chemicals to coater. Troubleshoot problems. Adjust settings. QA/QC

Clean pumps and clean coating equipment.

Typical shift reported. Three narrow and one wide oven operating. Wide oven not coating.

Only one of six possible wide ovens operating.

PRE-CALIBRATION	POST-CALIBRATION	CALCULATIONS
PUMP MFG. Gillian GilAir5	PUMP MFG. Gillian GilAir5	Average Pump Flow: 1.709
PUMP No. G13	PUMP No. G13	L/min
LOCATION Site	LOCATION Site	
FLOW RATE	FLOW RATE (CIRCLE ONE)	Name DCS
1.724 <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	1.694 <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	Method BIOS DC-1 Dry Cal
		6/3/2003 Time

PUMP NO.	SAMPLE INFORMATION			CLOCK TIME			SAMPLE VOLUME (LITER)	RESULT (DIRECT READ)
	FIELD NO.	TYPE MEDIA	LOT NO.	START	STOP	TIME (MIN.)		
13	G13	PVC Pre-Wei	H2NN02628	7:48	12:14	266	454.594	
		Omega 5.0 um		12:45	15:04	139	237.551	
		Lot#AZ020501-B3765				0	0	
						0		
					TOTAL	405	692.145	

INTERFERENCES AND IH COMMENTS TO LAB	Supporting Sample Field #
	Blanks
	Bulks
	Other

REVIEWED BY	PRINT	SIGNATURE	TAC EPA 04621
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# INDUSTRIAL HYGIENE AIR SAMPLING RECORD FIELD DATA SHEET

314 North Pearl Street  
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LEASE PRINT

CLIENT NAME Teconic  
PROJECT LOCATION Petersburg, NY  
SPECIFIC LOCATION Building #4

PERSON PERFORMING SAMPLING Cameron Steuer, MS, CIH	SHIPPING DATE	SAMPLING DATE 6/3/2003	NIOSH SAMPLING METHOD In House
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ONITORED EMPLOYEE/AREA Building #4, Top of oven catwalk. South end hand rail, "downwind" of ovens.		S.S. #
TITLE	DEPARTMENT	

TASK/OPERATION oven Heating	PPE	ENG/WORK PRACTICES
--------------------------------	-----	--------------------

ENVIRONMENTAL CONDITIONS AND NOTES Five of six ovens operating during shift. Some "smoke" seen coming out of the tops of ovens 11 and 12. Reportedly due to one roll being passed for the first time, and the second being passed for the second time. Exhaust fan on wall operating periodically, not constantly. Typical operations reported.
--

PRE-CALIBRATION PUMP MFG. Gillian GilAir5 PUMP No. G17 LOCATION Site FLOW RATE 1.706 <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	Name: DCS Calibrator: BIOS DC-1 DryCal Date: 6/3/03 Time: 745	POST-CALIBRATION PUMP MFG. Gillian GilAir5 PUMP No. G17 LOCATION Site FLOW RATE (CIRCLE ONE) 1.609 <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	CALCULATIONS Average Pump Flow: 1.6575 L/min Name DCS Method BIOS DC-1 Dry Cal 6/3/2003 Time
---	---	---	--

PUMP NO.	SAMPLE INFORMATION			CLOCK TIME			SAMPLE VOLUME (LITER)	RESULT (DIRECT READ)
	FIELD NO.	TYPE MEDIA	LOT NO.	START	STOP	TIME (MIN.)		
17	G17	PVC Pre-Well	H2NN02628	8:14	15:04	410	679.575	
		Omega 5.0 um				0	0	
		Lot#AZ020501-B3765				0	0	
						0		
					TOTAL	410	679.575	

INTERFERENCES AND IH COMMENTS TO LAB	Supporting Sample Field #
	Blanks
	Bulks
	Other

REVIEWED BY	PRINT	SIGNATURE	TAC EPA 04622
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# INDUSTRIAL HYGIENE AIR SAMPLING RECORD FIELD DATA SHEET

314 North Pearl Street  
Albany, New York 12207  
518-434-4546 / 434-0891 FAX

CLIENT NAME Teconic  
PROJECT LOCATION Petersburg, NY  
SPECIFIC LOCATION Building #4

PLEASE PRINT

PERSON PERFORMING SAMPLING	SHIPPING DATE	SAMPLING DATE	NIOSH SAMPLING METHOD
Cameron Steuer, MS, CIH		6/3/2003	In House

MONITORED EMPLOYEE/AREA		S.S. #
Building #4 Oven Room, First floor, Southend atop the Smog Hog (fan end), under exhaust fan		
TITLE	DEPARTMENT	
TASK/OPERATION	PPE	ENG/WORK PRACTICES
Oven Operation		

## ENVIRONMENTAL CONDITIONS AND NOTES

See data sheet for sample B17.

PRE-CALIBRATION		POST-CALIBRATION	CALCULATIONS
PUMP MFG. Gillian GilAir5		PUMP MFG. Gillian GilAir5	Average Pump Flow: 1.7725 L/min
PUMP No. G16		PUMP No. G16	
LOCATION Site		LOCATION Site	
FLOW RATE	Name: DCS	FLOW RATE (CIRCLE ONE)	Name DCS
1.738 <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	Calibrator: BIOS DC-1 DryCal	<input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	Method BIOS DC-1 Dry Cal
	Date: 6/3/03 Time: 745	1.807	6/3/2003 Time

PUMP NO.	SAMPLE INFORMATION			CLOCK TIME			SAMPLE VOLUME (LITER)	RESULT (DIRECT READ)
	FIELD NO.	TYPE MEDIA	LOT NO.	START	STOP	TIME (MIN.)		
16	G16	PVC Pre-Wei	H2NN02628	8:20	15:04	404	716.09	
		Omega 5.0 um				0	0	
		Lot#AZ020501-B3765				0	0	
						0		
					TOTAL	404	716.09	

INTERFERENCES AND IH COMMENTS TO LAB	Supporting Sample Field #
	Blanks
	Bulks
	Other

REVIEWED BY

PRINT

SIGNATURE

TAC EPA 04623



314 North Pearl Street  
Albany, New York 12207  
518-434-4546 / 434-0891 FAX

## INDUSTRIAL HYGIENE AIR SAMPLING RECORD FIELD DATA SHEET

PLEASE PRINT

CLIENT NAME Teconic  
PROJECT LOCATION Petersburg, NY  
SPECIFIC LOCATION Dispersion Room

PERSON PERFORMING SAMPLING <u>Cameron Steuer, MS, CIH</u>	SHIPPING DATE	SAMPLING DATE <u>6/3/2003</u>	NIOSH SAMPLING METHOD <u>In House</u>
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MONITORED EMPLOYEE/AREA <u>Cott Burt</u>	S.S. # <u>XXX-XX-5956</u>
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TITLE	DEPARTMENT
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TASK/OPERATION <u>Dispersion</u>	PPE <u>Goggles, gloves, Wilson 8000 w P-100 and acid/ov cartridge</u>	ENG/WORK PRACTICES
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ENVIRONMENTAL CONDITIONS AND NOTES <u>Fix dispersion products. Clean mixing equipment and drums. Houskeeping of areas. Transport chemicals to ovens. Wear a full face resp when conducting "dusty" or "nasty gas" mixing (acids, ammonia, etc.). Was not wearing resp when mixing PFOA</u>
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PRE-CALIBRATION PUMP MFG. <u>Gilian GilAir5</u> PUMP No. <u>G15</u> LOCATION <u>Site</u> FLOW RATE <u>1.707</u> <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	Name: <u>DCS</u> Calibrator: <u>BIOS DC-1 DryCal</u> Date: <u>6/3/03</u> Time: <u>745</u>	POST-CALIBRATION PUMP MFG. <u>Gilian GilAir5</u> PUMP No. <u>G15</u> LOCATION <u>Site</u> FLOW RATE (CIRCLE ONE) <u>1.699</u> <input checked="" type="checkbox"/> L/min <input type="checkbox"/> cc/min	CALCULATIONS Average Pump Flow: <u>1.703</u> L/min Name <u>DCS</u> Method <u>BIOS DC-1 Dry Cal</u> <u>6/3/2003</u> Time
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PUMP NO.	SAMPLE INFORMATION			CLOCK TIME			SAMPLE VOLUME (LITER)	RESULT (DIRECT READ)
	FIELD NO.	TYPE MEDIA	LOT NO.	START	STOP	TIME (MIN.)		
G15	G15	PVC Pre-Weigh	H2NN02628	7:48	15:15	447	761.241	
		Omega 5.0 um				0	0	
		Lot#AZ020501-B3765				0	0	
						0		
					TOTAL	447	761.241	

INTERFERENCES AND IH COMMENTS TO LAB	Supporting Sample Field #
	Blanks
	Bulks
	Other

REVIEWED BY	PRINT	SIGNATURE
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